



1920s weather board - Steps to 7 Stars

The Home

This North Geelong home is very typical of the era where post war homes were built en mass to meet the property demand. The home is timber construction finished in weather board external lining and pitched roof. The home has timber floors sitting on stumps (highly ventilated) with mostly original doors and double hung windows. Over the years the home has had some modification with the addition of rooms to the rear of the home under a skillion roof with North rooms facing onto a covered carport area.

The Need

The environmentally aware owners found the home very cold in winter, despite running two electric heaters throughout the day. They decided that it was time to investigate what they could do to improve the thermal performance of their home. The home had been insulated some years back but they were just not sure if it was effective. Whilst they could have under-taken some DIY measures the couple wanted to call in the experts to get a true picture of their home and make a priority list for improvement.

The Solutions

In 2008 the owners of the home commissioned ecoMaster to conduct an assessment of the property to see what would be the most effective way to improve its thermal performance. The initial assessment rated the home at around 1.9 stars. The main aim of the assessment was to uncover the best use of funds for the greatest improvement in saving energy and making the home more comfortable. The following measures were taken over a period of 4 years to bring the home to its current 7.0 Star Rating:

Draught Proofing:

The major source of draught in the home were the redundant wall vents, poor sealing of external doors and windows, which have deteriorated over the years and an unsealed exhaust fan which had an chimney effect sucking any heat into the roof cavity. The redundant vents, which are very common for this era of home and are now not needed as homes are no longer heated by open fireplaces or unflued gas heaters, were simply closed off with sealant. All external doors and sash windows were fitted with new timber perimeters with enclosed compressive seals or brush seals to eliminate draughts. The exhaust fan was replaced with a self-sealing exhaust fan from Mistral.

Shading of the home

Whilst most of the windows of the home were well served by shading, the kitchen area was a problem with the major heat build-up from the North covered carport. This was fixed with the installation of a solar reflective blind fitted to the inside of the window which could be pulled down on hot days.

Heat Transfer

As the front rooms were difficult to heat and the homes draughts were now minimised, ecoMaster recommended that an air transfer system be installed to move warmer air from the rear of the home to the front rooms. The system could also double as an air clothes dryer. The couple also chose to install a passive solar heating system into the bedroom to reduce moisture and warm the room using heated air from an external heat box located on the roof.





Ceiling Insulation

The home had been insulated some years earlier with blow-in cellulose and had varying depths across the roof space which offered a resistance value of around R01.5. The rear skillion roof had glass batts of a value of around R2.5. The pitched area of the roof was significantly improved by adding an environmentally sound R2.0 Polyester batt over the existing cellulose product and adding a reflective pleated batt to reflect radiant summer heat. This measure now offers a finished resistance value of R4.9 in summer and R4.2 in winter.

Under Floor Insulation

As the home had a highly ventilated sub floor it was suggested to insulate the floor as well as seal the insulation from draughts with a wind barrier. The floor was treated by installing the environmentally sound R 1.5 Polyester batt (GreenStuf) between the joists of the floor and then sealing over the complete subfloor with Air-Cell Retrosshield. This treatment with the timber floor now offers a resistance value of around R2.9.

Wall Insulation

The external walls of the home were another area of heat loss from the home with just the plaster board and weather boards offering the only resistance. To bring the walls to a rating of R2.0, a granulated rockwool insulation was pumped into the cavity via small holes drilled into the weather boards externally. These were then sealed and repainted.

Glazing

As many of the other areas in the home were now treated it was only the windows that were preventing the home from reaching its highest possible star rating. With the new developments in secondary glazing, the home's original windows could be used to create cost effective double glazing. The new "ecoGlaze" system allowed additional components to be added to the existing frames to create a still air space of around 12-18mm (the desired separation for the best thermal performance). This final piece of the puzzle allowed the home to reach its current star rating of 7 Stars.

The Benefits

The owners of the home now enjoy a 7 Star rated home

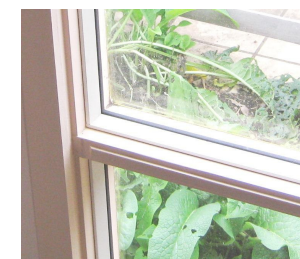
- cool in summer, warm in winter,
- significantly reduced energy costs,
- quiet and comfortable all year around.

The products used were chosen for not only the benefits they could offer with improved performance but good choices for the environment

- ideally products produced in Australia to limit transport,
- low embodied (low in energy to produce) products,
- product with long life to ensure replacement is not necessary in years to come,
- products that could be recycled at the end of their life,
- products sensitive to the environment and the people that will be living with them long term.

This home is often open under the Sustainable House Day scheme.

For further information refer to www.ecoMaster.com.au



ecoMaster Pty Ltd

1300 326 627

sales@ecoMaster.com.au

www.ecoMaster.com.au

